



ISLSCP Initiative II Completion-Evaluation

Supported Through:
NASA Earth Science REASoN Program

- Status
- Plans
- Issues

ISLSCP I

Pioneering Data Synthesis for Earth Science

- ✦ Initiated in 1992, completed in 1995
- ✦ 1987-1988, 1 degree, monthly, global
- ✦ Land cover, meteorological, radiation, SST, Runoff
- ✦ Over 13,000 CD-ROMs ordered from the Goddard DAAC.
- ✦ Over 267, 000 files downloaded from web site.
- ✦ Over 500 citations in the scientific literature

Journal of Climate
Monthly Weather Review
Journal of Hydrometeorology

Journal of Applied Meteorology
Bulletin of the American Meteorological Society
Earth Interactions

supporting a wide variety of uses:

- ✦ Weather forecast improvements
- ✦ Hydrological applications
- ✦ Macroscale basin modeling
- ✦ Biogeochemical and carbon tracer models
- ✦ Global carbon flux model intercomparisons
- ✦ General Circulation Models
- ✦ Model validation and intercomparison
- ✦ Algorithm development
- ✦ Education



Partners and Data Providers



Global Energy and
Water Cycle Experiment



International Geosphere-
Biosphere Programme --
Data & Information System



European Centre for
Medium-range Weather
Forecasts (ECMWF)



NASA Goddard
Space Flight Center



Oak Ridge National Laboratory
Distributed Active Archive Center



Goddard Distributed
Active Archive Center



NOAA's National Centers for
Environmental Prediction



IGBP Biospheric Aspects of the
Hydrologic Cycle (BAHC)



EROS Data Center (USGS)



Global Runoff
Data Center



Global Precipitation
Climatology Project



Surface Radiation Budget
(NASA-Langley)



Socio-Economic
Data Archive Center



National Oceanic and
Atmospheric Administration
(NESDIS and CMDL)



National Snow and
Ice Data Center



Global Precipitation
Climatology Centre (GPCC)



International Satellite
Cloud Climatology Project



Center for Ocean-Land-Atmosphere
Studies



Department of Geography
University of Maryland



Department of Atmospheric Science
Colorado State University



Department of Geography
Boston University



National Institute of Public Health
and the Environment (The Netherlands)



Center for Sustainability and
the Global Environment
University of Wisconsin-Madison



Lamont-Doherty Earth
Observatory, Columbia University



Global Hydrology Research Group
University of New Hampshire



Duke University



ISLSCP Initiative II (1999-2005)

❖ ISLSCP II expands upon the ISLSCP I collection with improved data sets and finer spatial resolution:

- Spatial resolution is 1/4, 1/2, and 1 degree.
- Temporal resolution covers 10-year period from 1986 to 1995.
- Improved satellite data analysis algorithms
- New data sets added (47 data sets in the collection)
 - Topography, Soils, ECMWF/NCEP reanalysis, runoff.
 - Satellite precipitation data sets
 - Carbon modeling data sets
 - Socioeconomic data

Initiative II Science Working Group

◆ Monthly teleconferences to guide the development of the data collection:

- ✦ Pavel Kabat, DLO Winand Staring Centre (ISLSCP Chair)
- ✦ Rick Lawford, GEWEX
- ✦ Ichtiague Rasool, Univ. of Paris VI
- ✦ Randy Koster, NASA/GSFC (Modeling requirements)
- ✦ Carbon: Scott Denning, Colorado State Univ., Dick Olson, Oak Ridge National Lab.
- ✦ Vegetation: Sietse Los, Ruth DeFries, Univ. of Maryland, Alan Strahler, Boston Univ.
- ✦ Radiation/Clouds: Paul Stackhouse, NASA/Langley
- ✦ Near-surface Meteorology: Alan Betts, Pedro Viterbo, ECMWF, Glenn White, NCEP.
- ✦ Snow/Ice: Richard Armstrong, Univ. of Colorado.
- ✦ Topography/Soils/Runoff: Paul Dirmeyer, Center for Ocean-Land-Atmosphere Studies (COLA), Kris Verdin USGS/EROS Data Center, Charles Vorosmarty, Univ. of New Hampshire, Wolfgang Cramer, IGBP-DIS.
- ✦ Precipitation: Arnold Gruber, NOAA/NESDIS, George Huffman, NASA/GSFC
- ✦ Socio-Economic Data Sets -- Mark Levy (CESIN)



Data Volumes:

5 DVDs (~4.3 GB data each)

- 1 - ECMWF Meteorology, 3 hourly monthly averages
- 2 - NCEP Meteorology, “
- 3 - SRB Radiation, “
- 4 & 5 - All the rest

Full 3 hourly data sets (~180 GB compressed, 47 DVDs) available
via Web based DODS

	Data Category	Data Set	Data Set Received?	Data Set Processed ?	First Review Status	Second Review Status	Land Sea Mask Applied ?	1 degree Available?	Actions
1	Carbon	Air-Sea CO2 Exchange	x	x	x	x	1 degree only	yes	
2		CDIAC Fossil Fuel Emissions	x	x	x		Not applicable	yes	Eric to complete document
3		EDGAR Gridded Greenhouse Gas Emissions (CO2, CH4, SO2, CH4,NOx)	x	x	No document		Not applicable	yes	We need to produce documentation
4		Gridded Net Primary Production (NPP)	x	x	x	x	yes	yes	
5		Modelled NPP for 17 models	x	x	x	x	yes	yes	
6		Riverine Flux of Carbon to the Oceans	x	x	x	x	yes	yes	Documentation needs minor updates
7		Atmospheric CO2 Concentrations	x	x	Skip First Review	x	not needed	point	Dave to clean up unneeded files; Documentation to be updated
8		Atmospheric Methane Concentrations	x	x	Skip First Review	x	not needed	point	Dave to clean up unneeded files; Documentation to be updated
9		FLUXNET	x	x	x	x	not needed	point	
10		Point NPP	x	x	x	x	not needed	point	
11	Socioeconomic	Gridded Population	x	x	x	x		yes	Apply Land/sea mask as per FGH
12		Gross National Product	x	x	x	x		yes	Apply Land/sea mask as per FGH
13	Vegetation	Albedo (AVHRR)	x	x	x	x		yes	Data issues found
14		Albedo (ERBE)	x	x	x	x	not needed	yes	
15		Albedo (MODIS)	x	x	x	x		yes	
16		Albedo (NOAA-NESDIS)	x	x	x	x	yes	yes	Finish documentation
17		Albedo (snow-free)	2 weeks to re-process	Data to be reprocessed	x		yes	yes	Reprocess after FASIR reprocess; FGH document comments sent to author
18		C4 Percentage	x	x	x	x	yes	yes	
19		Ecosystem Rooting Depth	x	x	x	x	yes	yes	
20		FASIR-Biophysical Parameters	x	Data being checked	x	B. Middleton	yes	yes	Data delivered 2/27/04; Forrest in charge of evaluations; B. Middleton to do 2nd review
21		FASIR-NDVI	x	Data being checked	x	B. Middleton	yes	yes	Data delivered 2/27/04; Forrest in charge of evaluations; B. Middleton to do 2nd review
22		GIMMS-NDVI	x	Data being checked	Forrest Hall		yes	yes	Forrest in charge of evaluations; need second reviewer
23		Historical Cropland Cover	x	x	x	x	yes	yes	
24		Historical Land Cover	x	x	x	x	yes	yes	
25		Land Cover (Continuous Fields)	x	x	x	x	yes	yes	
26		Land Cover(EDC)	x	x	x	x	All but BATS	yes	Eric to produce BATS scheme using new ISLSCP2 Inland Water Mask
27		Land Cover (MODIS)	x	x	x	x	yes	yes	
28		Land Cover (UMD)	x	x	x	x	yes	yes	
29		Potential Vegetation	x	x	x	x	yes	yes	
30		Point Leaf Area Index (LAI)	x	x	x	x	not needed	point	
31	Near Surface Meteorology	ECMWF Reanalysis	x	Processing 3-hourly	x		yes	yes	All data in hand; Processing 3-hourly + new data
32		NCEP Reanalysis	x	x	x	x	yes	yes	Data/Docs. at DAAC
33		CRU Monthly Climate Data Sets and Climatology	x	x	x	x	yes?	yes	Apply Land/sea mask as per FGH
34	Radiation and Clouds	SRB Radiation and Clouds	x	x	x	x	not needed	yes	data/docs to be transferred to DAAC
35	Hydrology, Soils and Topography	Digital Elevation Data (Hydro1k)	x	Reprocess data	x	x	Not applicable	yes	Final issue with aspect needs to be resolved
36		Precipitation (Daily Gauge)	x	x	x			yes	Apply Land/sea mask as per FGH
37		Precipitation (Gauge Only)	x	x	x	x		yes	Apply Land/sea mask as per FGH
38		Precipitation (Pentad Dataset)	x	x	x	x	not needed	yes	
39		Precipitation (Satellite & Gauge)	x	x	x	x	not needed	yes	
40		River Routing (STN30p)	x	Data being checked	x	Mike Coe	Coastlines	yes	
41		Rooting Zone Water Storage	x	x	x	x	yes	yes	
42		Soil Properties	x	Thermal Properties	x			yes	Eric re-processing data
43		Spatially Distributed Runoff	x	Data being checked	x		yes		
44		River Discharge	x	Data being checked	x		not needed	point data	
45	Snow and Sea Ice	Sea Ice Concentration	x	x	x	x	One degree only	yes	
46		Snow Cover Extent	x	x	x	x	One degree only	yes	
47	Oceans	Optimally Interpolated SST	x	x	x	x	yes	yes	
48	Ancillary Data	Land/Water/Sea Masks	x	x	x	x	N/A	yes	

ISLSCP2 Data Processing and Documentation Completion Schedule																
			<div> <div>← Data →</div> <div>← Documentation →</div> </div>													
	Data Category	Data Set	1/15/04	2/1/04	2/15/04	3/1/04	3/15/04	4/1/04	4/15/04	5/1/04	5/15/04	6/1/04	6/15/04	7/1/04	ACTIONS REQUIRED	
1	Carbon	CDIAC Fossil Fuel Emissions										←→			Data set in hand and processed; need to complete documentation and second review	
2		EDGAR Gridded Greenhouse Gas Emissions (CO ₂ , CH ₄ , SO ₂ , CH ₄ , NO _x)										←→			Data set in hand and processed; need to generate documentation, first and second review are needed; low priority	
3		Riverine Flux of Carbon to the Oceans							←→						Need to double check data processing and complete final version of documentation	
4		Atmospheric CO ₂ Concentrations									←→	←→			Need to check file archive and complete final version of documentation	
5		Atmospheric Methane Concentrations									←→	←→			Need to check file archive and complete final version of documentation	
6		FLUXNET	←→	DONE											DONE	
7	Socioeconomic	Gridded Population					←→	←→							Apply land/sea mask as per FGH and update documentation	
8		Gross National Product					←→	←→							Apply land/sea mask as per FGH and update documentation	
9	Vegetation	Albedo (AVHRR)					←→	←→							Dave Landis to apply land/sea mask and update documentation	
10		Albedo (MODIS)			←→	←→	←→								Need to apply land/sea mask and update documentation	
11		Albedo (NOAA-NESDIS)			←→	DONE	←→	←→							Dave Landis applying land/sea mask and updating documentation	
12		Albedo (snow-free)			←→	←→	←→								Two weeks to process by D. Dazlich; We assume the product does not require re-processing; documentation needs second review	
13		FASIR-Biophysical Parameters	←→	←→	←→	←→	←→								Data sets delivered 2/27/04; minimal re-processing required; Documentation needs second review	
14		FASIR-NDVI	←→	←→	←→	←→	←→								Data sets delivered 2/27/04; minimal re-processing required; Documentation needs second review	
15		GIMMS-NDVI	←→	←→	←→	←→	←→								Data set in hand; Applying ice mask; documentation needs first and second review	
16		Land Cover(EDC)	←→	←→	←→	←→	←→								Apply inland water mask to BATS scheme; documentation needs to be updated and re-reviewed	
17	Near Surface Meteorology	ECMWF Reanalysis	←→	←→	←→	←→	←→	←→	←→						All data in hand; re-process monthly data with land/sea mask; process all 3 hourly data; documentation needs to be updated and sent for second review	
18		CRU Monthly Climate Data Sets and Climatology									←→	←→			Processing only if land/sea mask needs to be applied	
19	Hydrology, Soils and Topography	Digital Elevation Data (Hydro1k)							←→	←→	←→	←→			Need to resolve issue w/aspect; submitted data will likely need re-processing	
20		Precipitation (Daily Gauge)							←→	←→	←→	←→	←→		Processing only if land/sea mask needs to be applied; documentation needs second review	
21		Precipitation (Gauge Only)	←→	←→								←→	←→		Need to update data set and documentation from new version; will need re-processing if land/sea mask is applied	
22		River Routing (STN30p)	←→	←→	←→	←→	←→								Re-processing needs to be checked; second review needs to be completed	
23		Soil Properties	←→	←→	←→	←→	←→								Eric to process all layers; documentation needs a lot of work plus second review	
24		Spatially Distributed Runoff						←→	←→	←→					Re-processing needs to be checked; second review needs to be completed	
25		River Discharge						←→	←→	←→					Re-processing needs to be checked; second review needs to be completed	


Schedule

Activity	Lst Qtr CY03	1 st Qtr CY04	2 nd Qtr CY04	3 nd Qtr CY04	4 nd Qtr CY04	1 st Qtr CY05	2 nd Qtr CY05
Complete Processing	X →						
Transfer to DAAC		X →					
Complete DAAC Implement.			X →				
Complete Evaluation			telecons	Wkshp 1	telecons	Final Wkshp	
Publish Results				Release Paper			Evaluation Paper

http://islscp2.sesda.com/ISLSCP2_1.html_pages/islscp2_home.html


Netscape: ISLSCP Initiative II Home Page

Back Forward Reload Home Search Netscape Images Print Security Shop Stop



ISLSCP Initiative II
The International Satellite Land
Surface Climatology Project
10-year Data Archive

Goddard Space Flight Center
Greenbelt, Maryland, USA



This Web site is currently under construction, with more data sets being added. There are some data set documents missing, and some data sets will be further modified. The CD/DVD-ROM final product of this data archive will be available in the fall of 2004.

The International Satellite Land-Surface Climatology Project, Initiative II Data Archive

The International Satellite Land-Surface Climatology Project (ISLSCP) is one of several projects of GEWEX ([Global Energy and Water Cycle Experiment](#) [Internet Link]) and has the lead role in addressing land-atmosphere interactions -- process modeling, data retrieval algorithms, field experiment design and execution, and the development of global data sets. Since its inception in 1983, ISLSCP has participated in workshops, and field experiments. In 1994, ISLSCP produced a five-volume CD-ROM collection of global data sets to support energy, water, and biogeochemical cycling studies covering 1987 to 1988 -- [ISLSCP Initiative I](#) [Internet Link].

The Initiative II data sets are based on the need for comprehensive data sets over the 10-year period from 1986 to 1995. The data are at a spatial resolution of 1 degree for the meteorological data and at 0.5 and 0.25 degrees for topography, soils, and vegetation parameters. ISLSCP Initiative II would not have been possible without the in-kind support of many [institutions and organizations](#).

ISLSCP II Data

- [Introduction to ISLSCP](#)
- ★ [What's New](#) ★ (recent changes to this site and the data)
 - [Direct "FTP-style" Access to the Data](#)
 - [Select Data by Category](#)
 - [Select Data by Scale](#) (1-degree, half-degree, quarter-degree)
 - [Select Data by Details](#) (matrix of author, date, scale)
 - [Select Data by Parameter](#) (list of parameters in data sets)
 - [List of Contents by Dec](#) (not done yet)
- [Links to Other Data Sets and Resources](#) (on the Internet)
- [Links Data Visualization Tools](#) (on the Internet)
- [Archives For Presentations](#)
- [Acknowledgements](#)



ISLSCP Initiative II

Related Pages

[ISLSCP Initiative II Home](#)

ISLSCP II General Data Categories

The global data sets are mapped at consistent spatial and temporal resolutions and are compiled in four key areas: land cover, hydrometeorology, radiation, and soils. The data sets cover those four areas, span the 10-year period, 1986-1995, and are mapped to consistent grids (0.5 x 0.5 degree for topography and land cover, 1 x 1 degree for meteorological parameters). The temporal resolution for most data sets is monthly; however, a few are at a finer resolution (e.g., 3-hourly).

The data sets in this archive have been organized by data categories, listed below. Click on the data category name to continue the data extraction process.

- [Carbon](#)
- [Hydrology, Soils, and Topography](#)
- [Near-Surface Meteorology](#)
- [Radiation and Clouds](#)
- [Snow, Sea Ice, and Oceans](#)
- [Socioeconomic](#)
- [Vegetation](#)
- [Ancillary Data](#)

Indexes: [Archive Contents](#) | [Data Set Details](#) | [Data by Scale](#) | [General Categories](#) | [Parameter List](#)

Related Pages:

[ISLSCP Initiative II Home](#)

[General Data Categories](#)

Revision Date: February 10, 2003

**Related Pages**[ISLSCP Initiative II Home](#)**ISLSCP Initiative II**

ISLSCP II Parameter List

This is a list of parameters included in the ISLSCP II data sets. Each parameter can appear in multiple data sets. The list is organized alphabetically by parameter, and includes additional scaling and unit information for each parameter.

Indexes: [Archive Contents](#) | [Data Set Details](#) | [Data by Scale](#) | [General Categories](#) | *Parameter List*



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Parameter	Data Set Name	Temporal Coverage	Temporal Frequency	Spatial Coverage	Units
Albedo	ERBE Monthly Albedo	1986-1990	monthly	2.5, 1 degree	unitless
	NCIP II Reanalysis Meteorology Data	1986-1995	fixed	1 degree	percent
	NOAA Monthly Snow-free Albedo from AVHRR	1985-1991	5-year average	1, 0.5, 0.25 degree	unitless
	SRB Radiation Data	1986-1995	monthly	1 degree	unitless
Albedo, All-Sky Surface	AVHRR Albedo from 1995	1995	monthly	1, 0.5, 0.25 degree	unitless
Albedo, Black-sky Surface	MODIS Albedo from 2001	2000-2001	every 16 days	1, 0.5, 0.25 degree	unitless
Albedo, Clear-Sky Surface	SRB Radiation Data	1986-1995	monthly	1 degree	unitless
Albedo, White-sky Surface	AVHRR Albedo from 1995	1995	monthly	1, 0.5, 0.25 degree	unitless
Aspect	MODIS Albedo from 2001	2000-2001	every 16 days	1, 0.5, 0.25 degree	unitless
	HYDROLik Elevation-derived Products	na	na	0.5 degree	degrees from North



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Parameter	Data Set Name	Temporal Coverage	Temporal Frequency	Spatial Coverage	Units
BRDF Parameters	AVHRR Albedo from 1995	1995	monthly	1, 0.5, 0.25 degree	unitless




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Example of DODS approach

—
Subsetting from large data holdings
to suit the users specific needs

—
Especially applicable to:

- 3 hourly, 10 years, $1^\circ \times 1^\circ$ ECMWF, NCEP and SRB data
- Users constrained by slower download data rates



Goddard Earth Sciences (GES)
Data and Information Services Center (DISC)
Distributed Active Archive Center (DAAC)
"Providing earth observation data and services for global change research"


Site Map
Search the DAAC:

[Home](#) [Welcome](#) [Data Access](#) [Data Information](#) [Tools & Services](#) [News](#) [Science Focus](#) [Contact Us](#)

MODIS Online Visualization and Analysis System (MOVAS)

MODIS/Terra Atmosphere Monthly Global Product (MOD08_M3)

This is non-JavaScript version for MODIS/Terra monthly parameters. [Click for Java/JavaScript version.](#)
Use text input boxes below the map to specify area; minimum area is 90°S ~ 90°N and 180°W ~ 180°E.



West Longitude: North Latitude:

East Longitude: South Latitude:

Parameter:

Armed Optical Thickness
Armed Pina Mode Fraction
Armed Pina Mode Fraction Land (QA MT)
Cloud Fraction NCEP Method
Cloud Reflectance

Color Level Option:
☒ Pre-defined
☐ Dynamic
☐ Custom: Min Max

Plot type:

Begin date: (Date Begin: 2000/04)

End date: (Date End: 2004/01)

Alert: A new window will be opened when "Generate Plot" or "ASCII Output" is selected.

Description

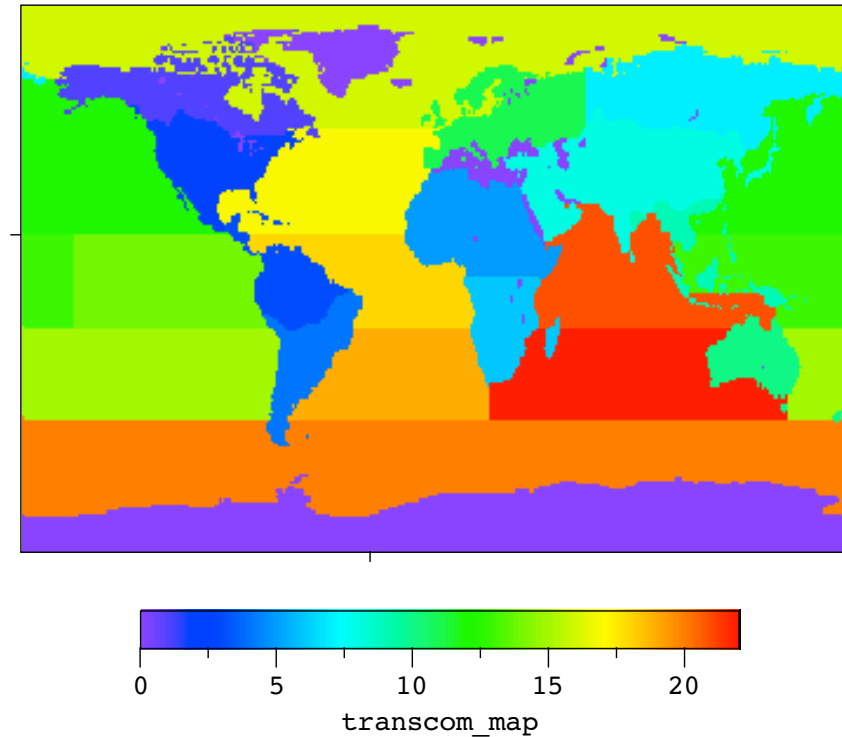
This interface is designed for visualization and analysis of the MODIS/Terra Level 3 atmosphere monthly global product (MOD08_M3). Users can generate image or ASCII Output for area coverage (area plot), time series (time plot), and Hovmöller diagram (longitude-time plot or latitude-time plot) for selected area and time period. Image animation is available for area plot.

Spatial coverage: 90°S ~ 90°N
Spatial resolution: $1^\circ \times 1^\circ$
Temporal resolution: Monthly
Documentation: [MODIS/Terra Armed Cloud Water Vapor Ozone README](#)
Data Access: [Search and order the original HDF data files containing all the parameters](#)
[FTP closed and binary data files each containing a single parameter](#)

Initial Evaluation Approach

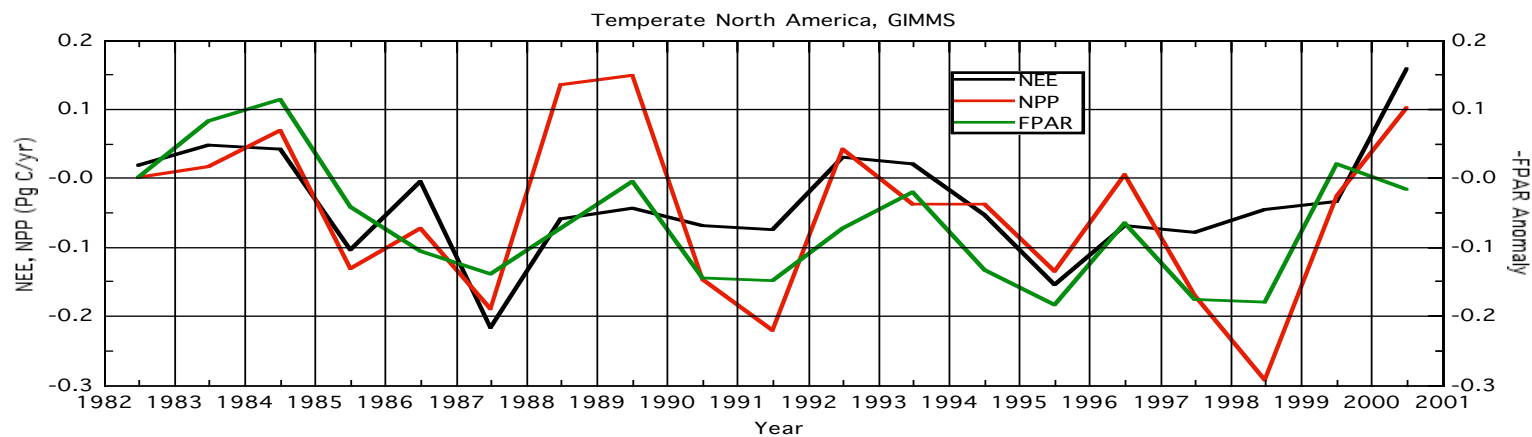
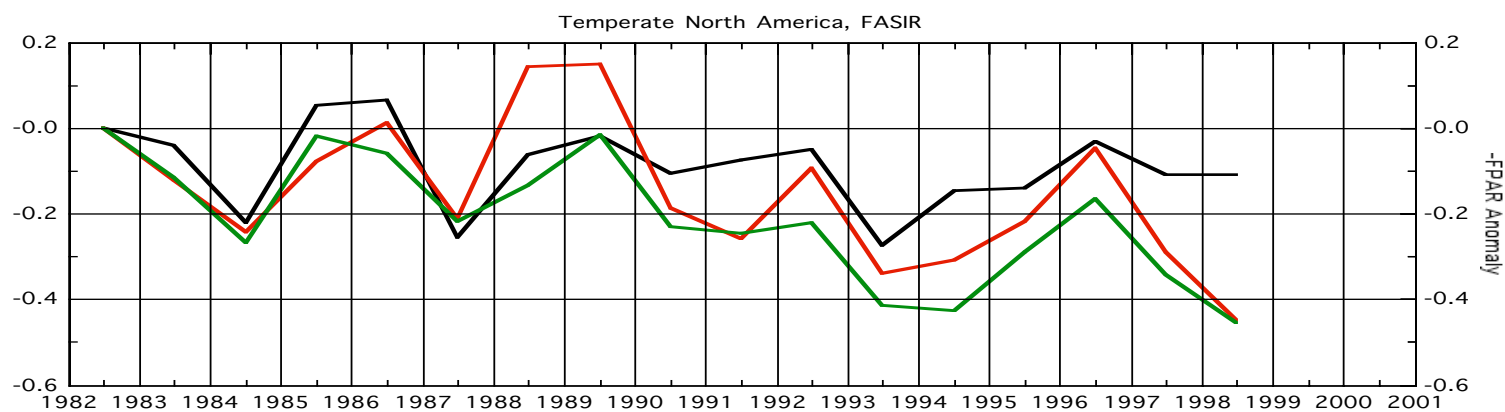
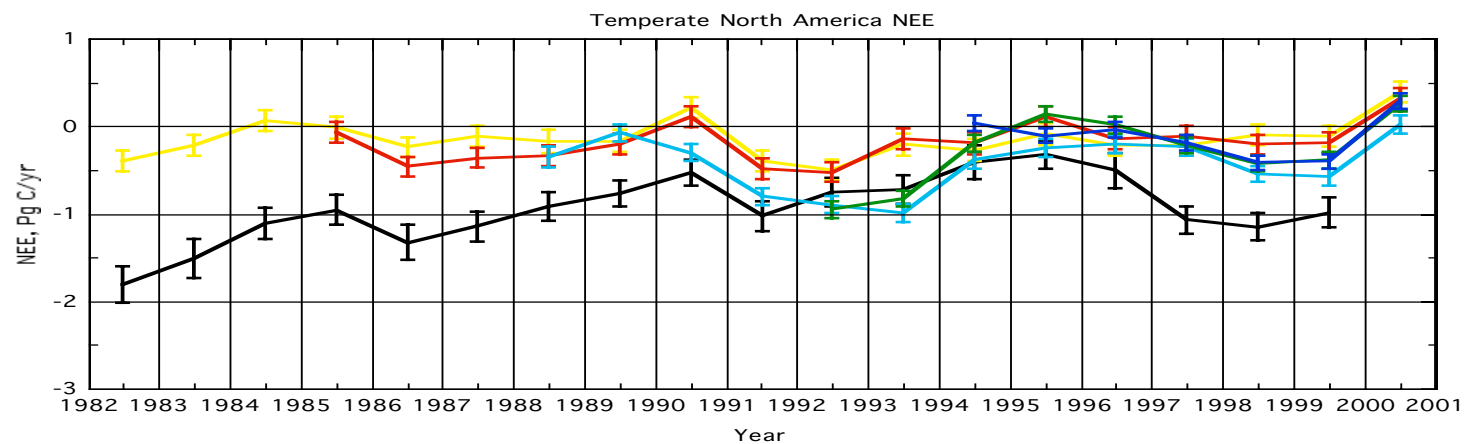
- Prerelease delivery of selected data sets for evaluation by science community
 - e.g. FASIR LAI to Yongkang Xue (UCLA), Ning Zeng (UMDCP)
- Comparison of data sets within ISLSCP II holdings.
 - NDVI: FASIR vs GIMMS
 - Albedo: MODIS, FASIR, NESDIS, AVHRR, SRB
 - Land Cover Classification: MODIS, IGBP, UMDCP
 - Climate (Temperature, Precipitation, Solar Irradiance: CRU, ECMWF, NCEP, GPCP, GPCC, SRB
 - Evapotranspiration: ECMWF, NCEP
- Model sensitivity to ISLSCP data products
 - Soil Wetness - Dirmeyer (COLA)
 - Carbon Fluxes - Collatz
 - Evapotranspiration - Koster (GSFC)
- Input from Science Working Group
- Workshop to review initial evaluation
- Publication in Peer Reviewed Journal (BAMS) upon release of ISLSCP II
- Evaluation and user guidance documentation included in release

Comparison of data sets within ISLSCP II holdings.



- Plots of interannual anomalies for TransCom Regions

Comparison between Atmospheric Inversions and Model Driven by Different NDVI Data Sets



Resource Requirements as Stated in Task Plan (09/03): Personnel

Jim Collatz - 0.0 FTE

Administration

Evaluation of carbon cycle relevant data

Forrest Hall - 0.2 WKY

Lead day to day activities of development team

Interface with Science Community

Eric Brown de Colstoun - 0.4 WKY

Collect and process data and documentation from providers

Evaluation of Land cover and other data sets

David Landis - 0.4 WKY

Web/DVD distribution of data

Interface with migration to DAAC

Lahouari Bounoua - 0.4 WKY

Evaluation of climate data

Interface with with climate model data users

Other

DVD burning

DAAC distribution fees



Issues:

- Funding Schedule

1/4 FY '03 - received

1/2 FY '04 - ?

1/4 FY '05

- DAAC distribution fees beyond '05